

Docket Number: 081468-0307087
Client Reference: P-0395.010-US



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of

KLAUS SIMON et al.

Group Art Unit: 1753

Application No.: 10/724,402

Examiner:

Filed: December 1, 2003

Confirmation No.: 8896

For: LITHOGRAPHIC APPARATUS AND DEVICE MANUFACTURING METHOD

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR 1.56, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO-1449. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom. Applicants respectfully request the Examiner return an initialed copy of the enclosed Form PTO-1449 to Applicants with the next Office communication to indicate that the reference(s) has been considered, per MPEP § 609.

This Information Disclosure Statement is being filed before the mailing date of the first Office Action on the merits in the present application. No certification or fee is required.

U.S. Patent No. 5,610,683, U.S. Published Application No. 2002/041420, Cerrina et al. and Singh-Gasson et al. articles were cited in a counterpart foreign application. An English language version of the foreign search report is attached.

The undersigned respectfully notes that copies of U.S. references are not required in applications filed after June 30, 2003.

Respectfully Submitted,

PILLSBURY WINTHROP LLP

Jean-Paul G. Hoffman
Registration Number 42663
Customer Number: 00909

Date: March 30, 2004

P.O. Box 10500
McLean, VA 22102
Telephone: (703) 905-2000
Facsimile: (703) 905-2500

FORM PTO-1449 (modified)
 To: U.S. Department of Commerce
 (PW FORM PAT-1449)
 Patent and Trademark Office



**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

Date: March 30, 2004

Page **1** of **3**

Atty. Dkt. No.	M#	Client Ref.
	307087	P-0395.010-US
Applicant: SIMON et al.		
Appln. No.: 10/724,402		
Filing Date: December 1, 2003		
Examiner: Unknown		Group Art Unit: 1753

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AR	3,573,975	04/1971	Dhaka et al.	117	212	
BR	3,648,587	03/1972	Stevens	95	44	
CR	4,346,164	08/1982	Tabarelli et al.	430	311	
DR	4,396,705	08/1983	Akeyama et al.	430	326	
ER	4,480,910	11/1984	Takanashi et al.	355	30	
FR	4,509,852	04/1985	Tabarelli et al.	355	30	
GR	5,040,020	08/1991	Rauschenbach et al.	355	53	
HR	5,121,256	06/1992	Corle et al.	359	664	
IR	5,610,683	03/1997	Takahashi	355	53	
JR	5,715,039	02/1998	Fukuda et al.	355	53	
KR	5,825,043	10/1998	Suwa	250	548	
LR	5,900,354	05/1999	Batchelder	430	395	
MR	6,191,429	02/2001	Suwa	250	548	
NR	6,560,032	05/2003	Hatano	359	656	

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
OR	WO 99/49504	09/1999	PCT	Fukami et al.		X		X
PR	EP 0023231	02/1981	Europe	Tabarelli et al.		X		
QR	EP 0418427	03/1991	Europe	Miyake		X		X
RR	EP 1039511	09/2000	Europe	Murakimi et al.		X		X
SR	DD 224448	07/1985	German	Hesse et al.			X	
TR	DD 242880	02/1987	German	Kuch			X	
UR	FR 2474708	07/1981	France	Letellier			X	
VR	JP 62-065326	03/1987	Japan	Moriuchi		X		
WR	JP 62-121417	06/1987	Japan	Nakazawa		X		
XR	JP 63-157419	06/1988	Japan	Nakasui		X		

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

YR	EP Search Report for EP 02258278.7 dated October 22, 2003	
ZR	M. Switkes et al., "Immersion Lithography at 157 nm", MIT Lincoln Lab, Orlando 2001-1, December 17, 2001	
AAR	M. Switkes et al., "Immersion Lithography at 157 nm", J. Vac. Sci. Technol. B., Vol. 19, No. 6, November/December 2001, pp. 2353-2356	
BBR	M. Switkes et al., "Immersion Lithography: Optics for the 50 nm Node", 157 Anvers-1, September 4, 2002	

Examiner

Date Considered:

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)
 To: U.S. Department of Commerce
 (PW FORM PAT-1449)
 Patent and Trademark Office



Atty. Dkt. No.	M#	Client Ref.
	307087	P-0395.010-US
Applicant: SIMON et al.		
Appln. No.: 10/724,402		
Filing Date: December 1, 2003		
Examiner: Unknown		Group Art Unit: 1753

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

Date: March 30, 2004

Page

2 of

3

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AR	6,603,130	08/2003	Bisschops et al.	250	492.1	
BR	6,633,365	10/2003	Suenaga	355	53	
CR	2002/0041420	04/2002	Garner	359	212	
DR	2002/0163629	11/2002	Switkes et al.	355	53	
ER	2003/0123040	07/2003	Almogy	355	69	
FR	2003/0174408	09/2003	Rostalski et al.	359	642	
GR						
HR						
IR						
JR						

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
KR	JP 04-305915 /	10/1992	Japan	Ozeki et al.		X		
LR	JP 04-305917 /	10/1992	Japan	Ozeki et al.		X		
MR	JP 06-124873 /	05/1994	Japan	Takahashi		X		X
NR	JP 07-220990 /	08/1995	Japan	Fukuda et al.		X		
OR	JP 10-228661 /	08/1998	Japan	Kurokawa		X		
PR	JP 10-255319 /	09/1998	Japan	Suenaga et al.		X		
QR	JP 10-303114 /	11/1998	Japan	Suwa		X		X
RR	JP 10-340846 /	12/1998	Japan	Kudo		X		X
SR	JP 2001-091849 /	04/2001	Japan	Aizaki et al.		X		
TR	JP 58-202448 /	11/1983	Japan	Kawamura et al.		X		
UR	WO 2004/019128	03/2004	PCT	Omura et al.				
VR	WO 03/077036 /	092003	PCT	Schuster		X		
WR	JP 07-132262 /	05/1995	Japan	Hirakawa et al.		X		
XR								
YR								
ZR								

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

AAR	B.J. Lin, "Drivers, Prospects and Challenges for Immersion Lithography", TSMC, Inc., September 2002	
BBR	B.J. Lin, "Proximity Printing Through Liquid", IBM Technical Disclosure Bulletin, Vol.20, No. 11B, April 1978, p. 4997	

Examiner

Date Considered:

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)
 To: U.S. Department of Commerce
 (PW FORM PAT-1449)
 Patent and Trademark Office

Atty.
 Dkt. No.

M#

Client Ref.



INFORMATION DISCLOSURE STATEMENT MAR 30 2004
BY APPLICANT

Date: March 30, 2004

Page **3** of **3**

Applicant: **SIMON et al.**

Appln. No.: **10/724,402**

Filing Date: December 1, 2003

Examiner: Unknown Group Art Unit: 1753

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AR						

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract	Translation Readily Available
					Enclosed	No
	BR				Enclose	No

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

CR	B.J. Lin, "The Paths To Subhalf-Micrometer Optical Lithography", SPIE Vol. 922, Optical/Laser Microlithography (1988), pp. 256-269	/				
DR	G.W.W. Stevens, "Reduction of Waste Resulting from Mask Defects", Solid State Technology, August 1978, Vol.21 008, pp. 68-72	/				
ER	S. Owa et al., "Immersion Lithography; its potential performance and issues", SPIE Microlithography 2003, 5040-186, February 27, 2003	/				
FR	S. Owa et al., "Advantage and Feasibility of Immersion Lithography", Proc. SPIE 5040 (2003)	/				
GR	Nikon Precision Europe GmbH, "Investor Relations – Nikon's Real Solutions", May 15, 2003	/				
HR	H. Kawata et al., "Optical Projection Lithography using Lenses with Numerical Apertures Greater than Unity", Microelectronic Engineering 9 (1989), pp. 31-36	/				
IR	J.A. Hoffnagle et al., "Liquid Immersion Deep-Ultraviolet Interferometric Lithography", J. Vac. Sci. Technol. B., Vol. 17, No. 6, November/December 1999, pp. 3306-3309	/				
JR	B.W. Smith et al., "Immersion Optical Lithography at 193nm", FUTURE FAB International, Vol. 15, July 11, 2003	/				
KR	H. Kawata et al., "Fabrication of 0.2μm Fine Patterns Using Optical Projection Lithography with an Oil Immersion Lens", Jpn. J. Appl. Phys. Vol. 31 (1992), pp. 4174-4177	/				
LR	G. Owen et al., "1/8μm Optical Lithography", J. Vac. Sci. Technol. B., Vol. 10, No. 6, November/December 1992, pp. 3032-3036	/				
MR	Cerrina et al., "Biological lithography: development of a maskless microarray synthesizer for DNA chips", Microelectronic Engineering 61-62:33-40 (2002)	/				
NR	Singh-Gasson et al., "Maskless fabrication of light-directed oligonucleotide microarrays using a digital micromirror array", Nature Biotechnology 17:974-978 (1999)	/				
OR	S. Owa et al., "Update on 193nm immersion exposure tool", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-51	/				
PR	H. Hata, "The Development of Immersion Exposure Tools", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-22	/				
QR	T. Matsuyama et al., "Nikon Projection Lens Update", SPIE Microlithography 2004, 5377-65, March, 2004	/				
RR	"Depth-of-Focus Enhancement Using High Refractive Index Layer on the Imaging Layer", IBM Technical Disclosure Bulletin, Vol. 27, No. 11, April 1985, p. 6521	/				
SR	A. Suzuki, "Lithography Advances on Multiple Fronts", EEdesign, EE Times, January 5, 2004	/				
TR						

Examiner

Date Considered:

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.